

PATENT
BAI525-270/01106
Customer No. 24,118

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

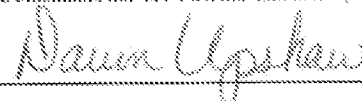
APPLICANT: RAHUL MEHRA)
BRENDAN LYSKEY)
SERIAL NO.: 09/802,021)
FILED: MARCH 8, 2001)
FOR: CONTROL SYSTEM FOR)
STORAGE MEANS)
GROUP ART UNIT: 2621)
EXAMINER: JAMIE JO ATALA)

APPELLANTS' APPEAL BRIEF

Mail Stop -- Board of Patent
Appeals and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Applicants/Appellants, Rahul Mehra and Brendan Lyskey, and their Assignee, Pace Plc, file this Appeal Brief pursuant to 37 CFR §41.37 in support of their appeal to the Board of Patent Appeals and Interferences.


Dawn Upshaw

37 CFR §41.37(c)(1)(i)
Real Party In Interest

The real parties in interest are the Applicants/Appellants, Rahul Mehra and Brendan Lynskey, and their Assignee, Pace Micro Technology, Plc.

37 CFR §41.37(c)(1)(ii)
Related Appeals and Interferences

There are no related appeals or interferences.

37 CFR §41.37(c)(1)(iii)
Status of the Claims

Claims 4 through 11, 13 through 15, 17 and 18 are pending in the present patent application and are appealed herein. Claim 18 is an independent claim relating to a receiver for digital data broadcast from a remote location. Claims 4, 5, 9, 15, and 17 each depend on Claim 18. Claim 6 is dependent on Claim 4, Claim 7 is dependent on Claim 6, Claim 8 is dependent on Claim 7, Claim 10 is dependent on Claim 9, Claim 11 is dependent on Claim 10, Claim 13 is dependent of Claim 7, and Claim 14 is dependent on Claim 9.

In summary, Claims 1, 2, 3, 12 and 16 have been cancelled, Claims 4 through 11, 13 through 15, 17 and 18 are pending, rejected, and on appeal. No claims have been allowed to date.

37 CFR §41.37(c)(1)(iv)
Status of Amendments

Applicant's/Appellant's original patent application claims priority to a United Kingdom Application, No. 0005542.6, filed March 9, 2000.

In an initial Office Action dated July 15, 2005 the Examiner rejected Claims 1 and 4 through 12 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. (U.S. Patent No. 5,995,155) in view of Geldman et al. (U.S. Patent No. 5,740,466). The Examiner also rejected Claims 2 and 3 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. in view of Geldman et al. and further in view of Murtha et al. (U.S. Patent No. 4,166,289). In a response dated December 15, 2005, Applicants/Appellants filed an amendment, amending Claims 1, 6, 7 and 15 and also adding new Claim 16.

Thereafter, in an Office Action dated March 8, 2006, the Examiner rejected Claims 1, 4 through 11 and 13 through 16 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. (U.S. Patent No. 5,995,155) in view Geldman et al. (U.S. Patent No. 5,740,466) and further in view Blatter et al. (U.S. Patent No. 5,754,651). In addition, the Examiner rejected Claims 2 and 3 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. in view of Geldman et al. and further in view of Blatter et al. and further in view of Murtha et al. (U.S. Patent No. 4,166,289).

In response thereto, Applicants/Appellants filed a Request for Continued Examination and an amendment dated July 6, 2006 amending Claim 1 and Claim 16.

Thereafter, the Examiner on September 6, 2006, in response to the Request for Continued Examination, rejected Claims 1, 4 through 11 and 13 through 16 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. (U.S. Patent No. 5,995,155) in view of Geldman et al. (U.S. Patent No. 5,740,466) and further in view of Blatter et al. (U.S. Patent No. 5,754,651). Additionally, the Examiner rejected Claims 2 and 3 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. in view of Geldman et al. and further in view of Blatter et al. and further in view of Murtha et al. (U.S. Patent No. 4,166,289).

In response thereto, on March 5, 2007, Applicants/Appellants filed an amendment which amended Claims 1 and 16 and added new Claim 17.

Thereafter, on June 4, 2007, the Examiner issued a final rejection rejecting Claims 1, 4 through 11 and 13 through 16 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. (U.S. Patent No. 5,995,155) in view of Geldman et al. (U.S. Patent No. 5,740,466) and further in view of Blatter et al. (U.S. Patent No. 5,754,651) and further in view of Barton et al. (U.S. Patent No. 6,233,389). Additionally, the Examiner rejected Claims 2 and 3 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. in view of Geldman et al. and further in view of Blatter et al. in view of Barton et al. and further in view of Murtha et al. (U.S. Patent No. 4,166,289).

In response thereto, Applicants/Appellants filed a response dated September 20, 2007. An Advisory Action was issued by the Examiner on October 27, 2007.

Applicants/Appellants filed a Request for Continued Examination and an amendment dated December 4, 2007, amending Claim 1.

Thereafter, the Examiner issued an Office Action dated March 14, 2008 rejecting Claims 1, 4 through 11 and 13 through 16 under 35 U.S.C. §103(a) as unpatentable over Schindler et al. (U.S. Patent No. 5,995,155) in view of Geldman et al. (U.S. Patent No. 5,740,466) and further in view of Blatter et al. (U.S. Patent No. 5,754,651). In addition, the Examiner rejected Claims 2 and 3 under U.S.C. §103(a) as unpatentable over Schindler et al. in view of Geldman et al. and further in view of Blatter et al. and further in view of Murtha et al. (U.S. Patent No. 4,166,289).

In response, Applicants/Appellants filed an amendment dated June 12, 2008 cancelling Claim 1 and amending Claims 2 through 5, 9, 15, 16 and adding new independent Claim 18.

The Examiner issued an Office Action dated September 17, 2008 finally rejecting Claims 2 through 11 and 13 through 18. In response thereto, Applicants/Appellants filed an amendment

dated January 19, 2009 amending independent Claim 18. Following an Advisory Action dated February 20, 2009, Applicants/Appellants submitted a Request for Continued Examination.

The Examiner issued an Office Action dated May 8, 2009 rejecting Claims 4 through 11, 13 through 16 and 18 under the new grounds of Schindler et al. (U.S. Patent No. 5,995,155) in view of Brightman et al. (U.S. Patent Publication No. 2006/0292292). On August 6, 2009, Applicants/Appellants filed an amendment amending independent Claim 18.

Finally, on December 9, 2009, the Examiner issued a final rejection on the new grounds of rejection based on the new combination of Schindler et al., Brightman et al. and Stoney.

37 CFR §41.37(c)(1)(v)
Summary of the Claimed Subject Matter

The claimed invention, as set forth in independent Claim 18, relates to a receiver for digital data broadcast from a remote location. The receiver includes a storage mechanism or means for selective storage of digital data broadcast from a remote location, the data to be stored including instruction data, block data, and paths for the data being decoupled. The receiver also includes a control system for control of the storage means or mechanism and control of storage of data therein, the control system including a single storage-instruction "first in first out" buffer being capable of receiving instructions in a generic form. The receiver also includes a control processing unit for analyzing the digital data to determine when it should be stored, the control processing unit inserting instructions in generic form into the single storage-instruction "first in first out" buffer. The instructions include (a) register read and write commands in a generic form for the control of storage of digital data in the storage mechanism; and (b) control system commands for automating the bulk transfer of the digital data to and from the storage means; and wherein within the single storage-instruction first-in-first-out buffer the control commands for

automating the bulk transfer of the digital data from the control system are compatible and intermixable with the register read and write commands.

An explanation of the subject matter defining each of the claims on appeal referring to the specification and to the drawings follows:

	Claim	Specification
4.	The receiver according to Claim 18 wherein the analysis, storage and directing of the incoming data into said receiver is performed by a control processing unit in said receiver.	page 4, lines 6-18; original Claim 4
5.	The receiver according to Claim 18 wherein said receiver controls which of the incoming data is to be stored and generates signals for control of said first in first out buffer to allow storage of the appropriate data.	page 4, lines 1-6; original Claim 5
6.	A receiver according to Claim 4 wherein the control processing unit loads the command signals data into said first in first out buffer which can include data which is in the same form as it is received by any from the group consisting of said receiver, the data which is altered by said computer processing unit and data generated by said computer processing unit.	page 4, lines 6-18
7.	A receiver according to Claim 6 wherein said control processing unit generates the command signals which instruct the transfer of data to and/or from said data storage means.	page 4, lines 1-5; original Claim 7
8.	A receiver according to Claim 7 wherein said command signals in said first in first out buffer alter the start time for the storage of portions of incoming data.	page 4, lines 6-18; original Claim 8
9.	A receiver according to Claim 18 wherein provision of each instruction in said first in first out buffer in a generic form allows any possible register read/write command to be sent from/to the attached storage means.	page 6, lines 11-16; original Claim 9

	Claim	Specification
10.	A receiver according to Claim 9 wherein said storage means is an advanced technology attachment compatible device.	page 3, lines 6-16; page 6, lines 11-21; original Claim 10
11.	A receiver according to Claim 10 wherein any additional information which is not used to provide the register read/write commands to the hard disk drive is used to instigate the automated bulk transfer of the streamed data to said storage means.	page 4, lines 19-24; original Claim 11
13.	A receiver according to Claim 7 wherein said command signal in said first in first out buffer allows a combined set of command signals to be generated.	page 4, lines 6-18
14.	A receiver according to Claim 9 wherein said storage means is an advanced technology attachment pack interface compatible device.	page 3, lines 6-16; page 6, lines 11-21
15.	The receiver according to Claim 18 wherein said receiver is connected to a storage means which allows selective storage of received data therein.	page 3, lines 16-23
17.	A receiver according to Claim 18 wherein the data required during said bulk transfer is a multiplex of many data streams.	page 5, lines 11-29
18.	A receiver for digital data broadcast from a remote location, said receiver comprising:	page 1, lines 8-18; page 3, lines 16-17; page 4, line 25
	a storage means for the selective storage of digital data broadcast from a remote location therein, the data to be stored including instruction data, block data, and paths for the data being decoupled;	page 1, lines 19-25; page 3, lines 24-28
	a control system for control of the storage means and control of storage of data therein, the control system including a single storage-instruction "first in first out" buffer being capable of receiving instructions in a generic form;	page 3, lines 19-23; page 6, lines 1-25

Claim	Specification
a control processing unit for analyzing the digital data to determine when it should be stored;	page 4, lines 2-5; original Claim 4
said control processing unit inserting instructions in generic form into the single storage-instruction "first in first out" buffer;	page 4, lines 6-18; page 6, lines 11-25
said instructions comprising:	page 6, lines 1-25
(a) register read and write commands in a generic form for the control of storage of the digital data in the storage means;	page 4, lines 19-24; page 6, lines 1-16
(b) control system commands for automating the bulk transfer of said digital data to and from said storage means; and	page 3, lines 19-23
wherein within the single storage-instruction first-in-first-out buffer the control commands for automating the bulk transfer of the digital data from the control system are compatible and intermixable with the register read and write commands.	page 4, lines 6-24; page 6, lines 11-25

37 CFR §41.37(c)(1)(vi)
Grounds of Rejection

The grounds of rejection to be reviewed on appeal are as follows;

Are Claims 4 through 11, 13 through 15, 17 and 18 unpatentable under 35 U.S.C. §103(a) over Schindler et al. (U.S. Patent No. 5,995,155) in view of Brightman et al. (U.S. Patent Publication No. 2006/0292292) in view of Stoney (U.S. Patent No. 6,237,079)?

37 CFR §41.37(c)(1)(vii)
Argument

The Asserted Combination Of Schindler et al. In View of Brightman et al. and Stoney Taken Together Does Not Achieve The Limitations of Independent Claim 18 or the Dependent Claims Thereon

Section 103(a) provides:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Independent Claim 18 includes claim limitations of a control system having a single storage-instruction first-in-first-out buffer receiving instructions in a generic form with the instructions comprising register read and write commands in a generic form and control system commands for automating bulk transfer of digital data to and from the storage means wherein the control commands for automating bulk transfer of the digital data from the control system are compatible and intermixable with the register read and write commands.

The Examiner's reliance on Schindler et al. on page 3 and 4 of the Office Action (column 11, lines 10-67) to show generic instructions is misplaced. Schindler only discloses buffering MPEG data within a FIFO buffer rather than the claimed feature of intermixing different command types within the buffer.

Indeed, the Examiner's own interpretation of Schindler et al. is inconsistent. In the Office Actions of July 15, 2005 (page 6 with reference to Claim 9), and March 8, 2006 (page 7 with reference to Claim 9), the Examiner states that Schindler et al. "fails to disclose instruction in the FIFO in a generic form." In the Office Action of June 4, 2007 (page 3 with reference to Claim 1), the Examiner states that Schindler "fails to disclose a single FIFO which uses generic commands..." In subsequent Office Action of September 17, 2008 and December 9, 2009 (which reference to Claim 1), however, the Examiner contradictorily states that the "FIFO buffer receives generic instructions."

Likewise, the Examiner's reliance on Brightman et al. is misplaced. There is no teaching in Brightman et al. of a single FIFO buffer of which control commands for the control system are inserted together with register read and write commands with which they are compatible and intermixable. Brightman et al. teaches that different command types go to different FIFOs --- configuration commands go to FIFO 4005, read commands go to FIFO a separate FIFO 4013 and write commands go to FIFO 4021. With further reference to Brightman et al. (paragraph 484, lines 4-10 and paragraph 485, lines 1-6), it is clear that the commands go to different FIFO buffers depending on their type rather than being intermixed within the same FIFO buffer as claimed.

Not only does Brightman et al. not teach or disclose the claimed features, it teaches away from the claimed features.

The additional citation of Stoney does not make up for the missing claim elements. Stoney relates to a method of controlling the interaction between a host CPU 202 and a graphical co-processor so that instructions in the host CPU can be decoupled to those in the co-processor. According to Stoney, column 11, lines 44-55, the CPU provides instructions to the co-processor via a dedicated bus 231. There is, however, no suggestion or disclosure of any control system commands for automating the bulk transfer of data to and from the storage mean. This is perhaps not surprising as Stoney is in a completely different field of technology. A skilled person therefore would not consider looking at the same. Additionally and again, there is no disclosure of the FIFO intermixing read and write commands in a single FIFO buffer. In Stoney, column 11, lines 48-56, a four port memory controller provides two write ports and two read ports with a separate FIFO for each port.

In Stoney, column 115, lines 10-15, it is taught that although four ports are preferable for speed, even a single FIFO for a read port or a write port leads to an improvement. In other words, this document teaches that different command types are not intermixed in the same FIFO buffer and it is preferable to have multiple buffers for this reason rather than a single one. Stoney not only lacks the claim features but teaches away thereafter.

The asserted combination Schindler et al., Brightman et al. and Stoney must teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Indeed, as the Board of Patent Appeal and Interferences has confirmed, a proper obviousness determination requires that an Examiner make “a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art.” See *In re Wada and Murphy*, Appeal 2007-3733, *citing In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). Further, the necessary presence of all claim features is axiomatic, since the Supreme Court has long held that obviousness is a question of law based on underlying factual inquiries, including ascertaining the differences between *the claimed invention* and the prior art. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) (emphasis added). Thus, it is well-settled law that obviousness requires at least a suggestion of all of the features in a claim. See *In re Wada and Murphy* (*citing CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) and *In re Royka*, 490 F.2d, at 985).

In summary, even if the teachings of the cited documents were combined together, the result would be a system in which different command types would not be intermixed and the read command, the write commands, and the control system commands would each be handled

by separate FIFO buffer. None of the documents either singly or taken together teach that control commands for automating the bulk transfer of data are intermixed with register read-write commands in a single FIFO.

Accordingly, the combination of Schindler et al., Brightman et al. and Stoney taken together does not reach or equate the limitation of independent Claim 18.

The remaining claims are dependent of Claim 18, include all the limitation thereof, and are believed to be allowable for all the same reasons.

The Asserted Combination of Schindler et al., Brightman et al.
and Stoney Under 35 U.S.C. § 103 is Improper

The combination of Schindler et al., Brightman et al. and Stoney is untenable. As the Supreme Court recently stated, "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). According to the USPTO's Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in view of the Supreme Court Decision in *KSR*, found at 72 Fed. Reg. 57,526, 57,528-57,529, the key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. § 103 should be made explicit.

The Examiner is required in accordance with the so-called *Graham* factors to make findings:

- (a) ascertaining the scope and content of the prior art;
- (b) ascertaining the differences between the claimed invention and prior art; and

(c) Resolving the level of ordinary skill in the pertinent art.

On page 5 of the Office Action, the Examiner states:

Brightman et al. teaches a system for processing and transferring of data through the use of FIFO and commands. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the system of receiving data from a remote location, as disclosed by Schindler et al., and further incorporated a system that provides read and write commands, as disclosed in Brightman, to allow for proper control of control commands and efficient storage of data.

On page 6 of the Office Action, the Examiner states:

It is taught by Stoney to provide a system for processing and storing data on a single FIFO in order to provide higher performance memory solutions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the system of receiving data from a remote location, as disclosed by Schindler et al. in view of Brightman, and further incorporate a system that uses various data being stored on a single FIFO, as disclosed by Stoney, to allow for efficient storage of data.

Initially, the Examiner never identifies the level of skill or background of a person skilled in the art. Additionally, the Examiner's rationales are conclusory statements, and as such are prohibited by the Examination Guidelines. There is no articulated reasoning with rational underpinning supporting the legal conclusion of obviousness.

In particular, the Examiner failed to resolve the *Graham* factual inquiries, also listed in the Examination Guidelines. The Examination Guidelines quotes *KSR*: "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *Id.* The Examination Guidelines go on to state, "If any of these findings [from the *Graham* factual inquiries] cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art." *Id.* A further argument against the Examiner's factual findings is not possible, as the Examiner failed to include such factual findings, based on

the *Graham* factual inquiries, in the Office Action. In summary, the Examiner has failed to state a prima facie case for the combination of three disparate references.

The Examiner applies a combination of three (3) references which lack many of the features recited by Applicants/Appellants, as well as lacking any motivation to change what the references describe. The Examiner has painted a broad brush of obviousness to create the features recited by Applicants/Appellants, and paints in a conclusory manner without specific findings for his conclusions. It is impermissible to use the claims as a frame and the prior art references as a mosaic to piece together a facsimile of the claimed invention, and the Examiner must avoid the "insidious effect of a hindsight syndrome wherein only that which the inventor taught is used against the teacher." *W.L. Gore & Associates v. Garlock*, 721 F.2d 1540, 1552-53 (Fed. Cir. 1988). The Examiner has failed to state a prima facie case for the asserted combination of Schindler et al., Brightman et al. and Stoney. None of the cited references, taken singularly or in combination, discloses the claimed invention. Furthermore, the references concern such disparate subject matter that it would not have been obvious to anyone to combine such references to produce anything approaching the claimed invention.

In view of the forgoing, Applicants/Appellants respectfully submit that independent Claim 18 patentably defines the claimed invention over the citations of record and over the other prior art.

The remaining claims are dependent on independent Claim 18, incorporate the limitations thereof, and are allowable for the same reasons.

The Rejection Can Not
Be Sustained

Even a brief review of the voluminous and lengthy prosecution of the present application over nine years with the Examiner repeatedly introducing new references while making final

actions, compels the conclusion that the combination of these references is untenable.

37 CFR §41.37(c)(1)(viii)
Claims Appendix

An appendix containing a copy of the claims is submitted herewith.

37 CFR §41.37(c)(1)(ix)
Evidence Appendix

None.

37 CFR §41.37(c)(1)(x)
Related Proceedings Appendix

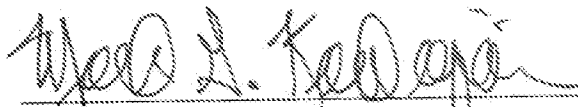
There are no related proceedings.

Summary

For all the foregoing reasons, it is believed that the present rejection should be lifted and that the application should proceed to allowance.

Pursuant to 37 CFR §1.117(f), the \$540 fee for filing the brief has been submitted. The Commissioner is hereby authorized to charge or credit any additional fees which may be required by this paper to Deposit Account No. 08-1500.

Respectfully submitted,



Mark G. Kachigian
Registration No. 32,840
HEAD, JOHNSON & KACHIGIAN, P.C.
228 West 17th Place
Tulsa, Oklahoma, 74119
(918) 587-2000
mkachigian@hiklaw.com
Attorneys for Applicants/Appellants

Date: June 7, 2010

Claims Appendix

1 4. The receiver according to Claim 18 wherein the analysis, storage and directing of
2 the incoming data into said receiver is performed by a control processing unit in said receiver.

1 5. The receiver according to Claim 18 wherein said receiver controls which of the
2 incoming data is to be stored and generates signals for control of said first-in- first out buffer to
3 allow storage of the appropriate data.

1 6. A receiver according to Claim 4 wherein the control processing unit loads the
2 command signals data into said first in first out buffer which can include data which is in the
3 same form as it is received by any from the group consisting of said receiver, and data which is
4 altered by said computer processing unit and data generated by said computer processing unit.

1 7. A receiver according to Claim 6 wherein said control processing unit generates
2 the command signals which instruct the transfer of data to and/or from said data storage means.

1 8. A receiver according to Claim 7 wherein said command signals in said first in
2 first out buffer alter the start time for the storage of portions of incoming data.

1 9. A receiver according to Claim 18 wherein provision of each instruction in said
2 first-in-first out buffer in a generic form allows any possible register read/write command to be
3 sent from/to the attached storage means.

1 10. A receiver according to Claim 9 wherein said storage means is an advanced
2 technology attachment compatible device.

1 11. A receiver according to Claim 10 wherein any additional information which is
2 not used to provide the register read/write commands to the hard disk drive is used to instigate
3 the automated bulk transfer of the streamed data to said storage means.

1 13. A receiver according to Claim 7 wherein said command signals in said first in
2 first out buffer allows a combined set of command signals to be generated.

1 14. A receiver according to Claim 9 wherein said storage means is an advanced
2 technology attachment pack interface compatible device.

1 15. The receiver according to Claim 18 wherein said receiver is connected to a
2 storage means which allows selective storage of received data therein.

1 17. A receiver according to Claim 18 wherein the data required during said bulk
2 transfer is a multiplex of many data streams.

1 18. A receiver for digital data broadcast from a remote location, said receiver
2 comprising:

3 a storage means for the selective storage of digital data broadcast from a remote location
4 therein, the data to be stored including instruction data, block data, and paths for the data being

5 decoupled;

6 a control system for control of the storage means and control of storage of data therein,
7 the control system including a single storage-instruction "first in first out" buffer being capable
8 of receiving instructions in a generic form;

9 a control processing unit for analyzing the digital data to determine when it should be
10 stored;

11 said control processing unit inserting instructions in generic form into the single storage-
12 instruction "first in first out" buffer;

13 said instructions comprising:

14 (a) register read and write commands in a generic form for the control of storage
15 of the digital data in the storage means;

16 (b) control system commands for automating the bulk transfer of said digital data
17 to and from said storage means; and

18 wherein within the single storage-instruction first-in-first-out buffer the control
19 commands for automating the bulk transfer of the digital data from the control system are
20 compatible and intermixable with the register read and write commands.